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Arizona Vaccine News
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July 11, 2013

The intent of Arizona Vaccine News is to summarize local, national, and international vaccine information that affects Arizona.

Newsletter Topics

VACCINE NEWS

- **CDC Updates Recommendations to Prevent Measles, Mumps, Congenital Rubella and Rubella**
- **Influenza Interim ACIP Recommendations for 2013-2014 Season**
- **ACOG's Updated Recommendations for Pertussis Vaccine in Pregnant Women**
- **Japanese Encephalitis Virus Vaccine Now FDA-approved for Ages ≥ 2 Months**
- **Immunocompromised 6-18 Year Olds Need Both PCV13 and PPSV23**
- **Progress towards Eradication of Polio**

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

- **Herpes Zoster Vaccine Is Effective but Uptake Is Low**
- **Recipients of Acellular Pertussis Vaccination Series Alone Have Higher Risk of Pertussis than Those Who Also Received Whole Cell Pertussis Vaccines**
- **Varicella Vaccine Protection Is Long-lasting over a 14-Year Period**
- **Higher Vaccine Exemption Rates Linked to Higher Rates of Pertussis**
- **Influenza Vaccine Is Effective in Preventing Outpatient, Inpatient, and Severe Cases of Laboratory-Confirmed Influenza**
- **Lack of Association of Guillain-Barré Syndrome with Vaccinations**

- **Uptake of Meningococcal Vaccine in Arizona Schoolchildren after Implementation of School-Entry Immunization Requirements**

RESOURCES

- **2013 Arizona Infectious Disease Training July 24-25, 2013**
- **AAP Vaccine Storage and Handling Resources**
- **Immunization Website for Pregnant Women**
- **Reporting Inadvertent Smallpox or Anthrax Vaccine Administration in Pregnant Women**
- **Free Spanish Language Childhood Immunization Posters Available**
- **Arizona Locations Where Yellow Fever Vaccines Are Administered**
- **Table of Influenza Vaccines Licensed in the US**

VACCINE NEWS

CDC Updates Recommendations to Prevent Measles, Mumps, Congenital Rubella and Rubella

- The Centers for Disease Control and Prevention (CDC) has updated its recommendations on the prevention of measles, mumps, congenital rubella, and rubella. Some of the changes include:
 - MMR should not be given to persons who have a family history of congenital or hereditary immunodeficiency in a first degree relative (parent or siblings) unless the immune competence of the potential vaccine recipient has been verified.
 - HIV-infected persons who are on effective antiretroviral therapy (ART) can receive the two doses of MMR vaccines according to the regular childhood schedule.
 - HIV-infected persons who received MMR vaccine before being on effective ART should be revaccinated with two doses of MMR vaccine.
 - A provider diagnosis of measles or mumps is no longer accepted as proof of immunity. This has been added to the previous recommendation that a provider diagnosis is not acceptable for rubella.
 - Additional measles postexposure recommendations for intramuscular immune globulin (IMIG) and intravenous immune globulin (IVIG) recommendations:
 - The lower age limit for giving IMIG to a measles-exposed child is now down to a newborn
 - A higher dose of IMIG is recommended for measles-exposed immunocompetent people (0.5 mL/kg with a maximum dose of 15 mL)
 - Measles-exposed severely immunocompromised persons and pregnant women who do not have evidence of measles immunity should receive IVIG 400 mg/kg.

For additional information, see *Morbidity and Mortality Weekly Report* (MMWR), [June 14, 2013](#).

Influenza Interim ACIP Recommendations for 2013-2014 Season

- This influenza season, there will be both trivalent and quadrivalent influenza vaccines. Trivalent vaccines have 2 influenza A and 1 influenza B strains. Quadrivalent vaccines will have the same influenza A and B strains as the trivalent, but will have an additional influenza B strain.
- Five new Food and Drug Administration (FDA) licensed influenza vaccines will be available. These are acceptable alternatives to other licensed products, to the extent that their specific indications allow.
- New abbreviations will be used to describe the increasing options for vaccine
 - IIV (inactivated influenza vaccine) will replace the abbreviation for TIV (trivalent influenza vaccine).
 - IIVs will be described based on how many strains of influenza they have: trivalent inactive vaccines will be abbreviated as IIV3, and quadrivalent inactivated vaccines will be abbreviated as IIV4.
 - Live, attenuated influenza vaccines will still be abbreviated as LAIV. However, this seasons' LAIV will be a quadrivalent vaccine (LAIV4).
 - Two of the new vaccines are inactivated vaccines that are not grown in eggs:
 - A trivalent influenza vaccine that is manufactured by a cell culture (cc) process. Its abbreviation is ccIIV3.
 - A trivalent influenza vaccine that is manufactured by recombinant DNA technology to produce the influenza hemagglutinins. Its abbreviation is RIV3. RIV3 can be given even when someone is severely egg-allergic.
 - For further information on presentations, age indications, and mercury content, see the [table](#) on the CDC's website.
- An Advisory Committee on Immunization Practices (ACIP) document with expanded recommendations about influenza vaccine will be published before the start of the 2013-2014 season.

See MMWR, [May 10, 2013](#).

ACOG's Updated Recommendations for Pertussis Vaccine in Pregnant Women

- The American College of Obstetricians and Gynecologists (ACOG) has issued a Committee Opinion in support of the recommendations of the Centers for Disease Control and Prevention (CDC) for all pregnant women to receive a pertussis vaccine (Tdap) during pregnancy, regardless of how many previous doses of Tdap she has received.
- Although giving Tdap between 27-36 weeks gestation is the optimal timing for transplacental passage of protective antibodies, Tdap can be given any time during pregnancy.

For more details, see Committee Opinion number 566, [June 2013](#).

Japanese Encephalitis Virus (JEV) Vaccine Now FDA-approved for Ages \geq 2 Months

- [JEV](#) is a mosquito-borne virus found throughout Asia and the western Pacific.
- The manufacturer of a previously licensed JEV vaccine had stopped production in 2006. In 2009, a JEV vaccine, [Ixiaro®](#), was licensed in the US for ages \geq 17 years, but US children did not have access to an FDA-approved JEV vaccine.
- Ixiaro® is now FDA-approved for ages 2 months and above. It is given in two doses at least 28 days apart.

For more details about age-related dosage and boosters, see the [package insert](#).

Immunocompromised 6-18 Year Olds Need Both PCV13 and PPSV23

- The CDC has published new [recommendations](#) regarding the 13-valent pneumococcal conjugate vaccine (PCV13) and the 23-valent pneumococcal polysaccharide vaccine (PPSV23) in children 6-18 years old with immunocompromising conditions.
- Both PCV13 and PPSV23 should be given to 6-18 year olds who have cerebrospinal fluid leaks, cochlear implants, splenic dysfunction from sickle cell disease and other hemaglobinopathies, congenital or acquired asplenia, or immunocompromise if they have not already received them.
- Asplenic and immunocompromised children will need a booster dose of PPSV23 at least five years after the first PPSV23.
- Conjugate vaccines are more immunogenic than polysaccharide vaccines, so in general, it is better to give PCV13 before PPSV23. However, PCV13 has a serotype that PPSV23 does not have, so giving PCV13 after PPSV23 gives additional benefit. Therefore, if immunocompromised children have received PPSV23 but not PCV13, they need to get PCV13 at least 8 weeks after PPSV23.
- In children, there should be a minimum interval of 8 weeks between PCV13 and PPSV23, in which ever order they are given.
- Children 6-18 years old who are immunocompetent but have medical conditions (chronic heart disease, chronic lung disease, chronic liver disease, diabetes mellitus, alcoholism, or cigarette smoking) need a single dose of PPSV23, but PCV13 is not recommended if they have not previously received it. See the [table](#) in MMWR, June 28, 2013.
- In 2012, CDC gave [recommendations](#) that adults who are 19-64 years old with underlying medical conditions need both PCV13 and PPSV23. The guidelines for minimum interval between the pneumococcal vaccines are different in adults than in children.
 - In adults, if PPSV23 is given first, there needs to be an interval of at least ONE YEAR before giving PCV13. However, if PCV13 is given first, there only needs to be a minimum of 8 weeks before giving PPSV23.

Progress towards Eradication of Polio

- As of March 2013, circulation of indigenous wild poliovirus (WPV) continues in only three countries: Afghanistan, Nigeria, and Pakistan.
- The number of WPV cases reported globally decreased 66%, from 650 in 2011 to 223 in 2012; WPV cases decreased 53% (from 80 to 37) in Afghanistan and 71% (from 198 to 58) in Pakistan, but increased 97% (from 62 to 122) in Nigeria.
- The number of imported WPV cases in previously polio-free countries decreased from 309 in 12 countries in 2011 to six in two countries in 2012.
- Security concerns continue to challenge the overall goal of global polio eradication.

See MMWR, [May 3, 2013](#).

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

Herpes Zoster Vaccine (HZV) Is Effective but Uptake Is Low

- In 765,000 randomly selected Medicare beneficiaries ages 65 and older between 2007 and 2009, only 3.9% had received the HZV.
- The shingles incidence rate was 5.4 per 1,000 person-years among those who had been vaccinated with HZV, compared to 10 per 1,000 person-years among unvaccinated individuals, for an overall vaccine effectiveness level of 48 %.
- In people with compromised immune systems, the HZV only had 37 % effectiveness against shingles, but its effectiveness against postherpetic neuralgia was 59 %.

See the article at *PloS Medicine*, [April 2013](#).

Recipients of Acellular Pertussis Vaccination Series Alone Have Higher Risk of Pertussis than Those Who Also Received Whole Cell Pertussis Vaccines

- Pertussis vaccination status was examined in 904 cases of pertussis ages 8-20 years old.
- Those with 5 total doses of only acellular pertussis vaccines (aP) had an 8.57 relative risk (RR) of pertussis ($P < .0001$) contrasted to those with 5 doses of vaccine that included at least 1 dose of whole cell pertussis vaccine (wP).
- Patients with 6 doses of aP, had a RR of pertussis of 3.55 ($P < .0001$) compared to those who had pertussis vaccines with at least 1 dose of wP.
- Receipt of 1 or more wP doses markedly augmented the durability of immunity from subsequent aP doses.
- A wholly aP vaccine series is significantly less effective and durable than one that contains the traditional wP vaccine.

See abstract in *Clinical Infectious Diseases*, [May 1, 2013](#).

Varicella Vaccine Protection Is Long-lasting over a 14-Year Period

- Varicella vaccine was licensed in the US in 1995 for people ≥ 12 months of age, and a second dose of varicella vaccine was recommended in June 2006.
- Children who were vaccinated with varicella vaccine (VZV) in their second year of life in 1995 (n=7,585) were followed up through 2009 for breakthrough varicella and herpes zoster (HZ). A second dose of VZV was given to 2,826 of these children in 2006–2009. Incidences of varicella and HZ were estimated and compared with prevaccine era rates.
- In the varicella vaccinated children, the average incidence of varicella was 15.9 per 1,000 person-years, nine- to ten-fold lower than in the prevaccine era.
- Vaccine effectiveness at the end of the study period was 90%, with no indication of waning over time.
- No child developed varicella after a second dose.
- HZ cases were mild, and rates of HZ were lower in the cohort of vaccinated children than in unvaccinated children during the prevaccine era.

See the abstract in *Pediatrics*, [May, 2013](#).

Higher Vaccine Exemption Rates Linked to Higher Rates of Pertussis

- New York State compared the religious vaccination exemptions per county to the pertussis incidence in children per county in 2010-2011.
- Counties with religious exemption rates of $\geq 1\%$ reported a higher incidence of pertussis (33 per 100,000) than counties with lower exemption rates (20 per 100,000) [$P < .001$].
- The risk of pertussis among vaccinated children living in counties with high religious exemption rates increased with increase of exemption rates among exempted children [$P = .008$].

See abstract in *Pediatrics*, [July 2013](#).

Influenza Vaccine Is Effective in Preventing Outpatient, Inpatient, and Severe Cases of Laboratory-Confirmed Influenza

- The influenza vaccination status of hospitalized patients with influenza in Spain was compared to outpatients with lab-confirmed influenza and outpatient controls.
- Influenza vaccine effectiveness was 75% in preventing influenza outpatient cases, 60% in preventing influenza-associated hospitalizations, and 89% in preventing severe cases.
- In inpatients with influenza, previous influenza vaccination was associated with a lower risk of severe influenza.

See abstract in *Clinical Infectious Diseases*, [July 15, 2013](#).

Lack of Association of Guillain-Barré Syndrome (GBS) with Vaccinations

- From 1995 through 2006, 415 confirmed cases of Guillain-Barré Syndrome (GBS) in northern California were assessed as to whether they had received vaccinations prior to the onset of GBS.
- The odds ratio of influenza vaccination within a 6-week interval prior to GBS, compared with the prior 9 months, was 1.1.
- The risk in the 6-week interval prior to GBS, compared to the prior 12 months for tetanus diphtheria combination, 23-valent pneumococcal polysaccharide, and for all vaccines combined was 1.4, 0.7, and 1.3, respectively.
- No evidence of increased risk of GBS was found following vaccinations of any kind, including influenza vaccination.

For more information, see the abstract in *Clinical Infectious Diseases*, [July 15, 2013](#).

Uptake of Meningococcal Vaccine in Arizona Schoolchildren after Implementation of School-Entry Immunization Requirements

- Meningococcal vaccine was added to Arizona school-entry requirements in 2008 for children entering 6th grade. Grades 7-12 became subject to the meningococcal requirement sequentially as it was phased in per grade on a yearly basis.
- ASIIS, Arizona's electronic vaccine registry, was used to measure the increase in meningococcal vaccination rates among 11- and 12-year-olds who were immunized between 1/2006-1/2011.
- The increase in meningococcal vaccination was statistically significant among all demographic groups.
- County demographic factors associated with lower odds of on-schedule vaccination included counties with higher poverty, more children younger than 18 years of age, fewer high school graduates, and a higher proportion of Native Americans.

See *Public Health Reports*, [January/February 2013](#).

RESOURCES

2013 Arizona Infectious Disease Training July 24-25, 2013

- The Arizona Department of Health Services, Office of Infectious Disease Services will present infectious disease [training](#) that covers a variety of topics in infectious disease including: vaccine preventable diseases; nosocomial infections; tuberculosis and sexually transmitted diseases; vector-borne and zoonotic diseases; food-borne diseases; and information on outbreaks and investigations.
- The training will take place at the Black Canyon Conference Center, 9440 N. 25th Avenue, Phoenix, AZ 85021. Interested health care practitioners are welcome to attend. [Registration](#) and parking are free.

AAP Vaccine Storage and Handling Resources

- The American Academy of Pediatrics has developed [new resources](#) to help pediatricians practice safe vaccine storage and handling.
- These resources include information on using and purchasing equipment (refrigerators, freezers and data loggers), a storage and handling checklist, tips for safe vaccine transport, and information to help write an emergency vaccine storage and handling plan.

Immunization Website for Pregnant Women

- The American College of Obstetricians and Gynecologists (ACOG) has a [website](#) to give women and healthcare providers accurate information about immunizations in women, including for pregnant women.

Reporting Inadvertent Smallpox or Anthrax Vaccine Administration in Pregnant Women


- Smallpox and anthrax vaccines are administered to members of the military.
- If a pregnant woman in the US military were to be inadvertently given either smallpox vaccine or anthrax vaccine during pregnancy, the case should be reported.
 - Telephone notification: 619-553-9255
 - Email notification: NHRC-BirthRegistry@med.navy.mil

Free Spanish Language Childhood Immunization Posters Available

- The CDC has [free Spanish language posters](#) available for order from the CDC warehouse to support your childhood immunization efforts.
- This [campaign](#) is not simply a translation of English materials, but rather an entirely different campaign developed for the target audience of Spanish-speaking parents of children under the age of two years.

Arizona Locations Where Yellow Fever Vaccines Are Administered

- The World Health Organization has delegated to the CDC who has delegated to the states the responsibility for designating a provider as certified yellow fever vaccine center.
- The Arizona Immunization Program Office [(602) 364-3856] processes provider applications and informs the CDC when a provider is a certified center. The provider's information is then added to a [CDC data bank](#) where patients and providers can find locations throughout Arizona and the US where yellow fever vaccines are administered.

7/11/2013	INFLUENZA VACCINES LICENSED IN UNITED STATES Summary by Karen Lewis, MD					
Company	Formulation and Number of Strains [§]	Trade name	Ages	How to Give	Grown in chicken eggs	OK to use if egg allergy
NEWLY LICENSED INFLUENZA VACCINES						
Medimmune	LAIV4	FluMist Quadrivalent®	2-49 yo	Intranasal	Yes	No
GSK	IIV4	Fluarix Quadrivalent®	≥ 3 yo	IM	Yes	Yes [¶]
Sanofi Pasteur	IIV4	Fluzone Quadrivalent®	≥ 6 mo	IM	Yes	Yes [¶]
Novartis	cclIV3	Flucelvax®	≥ 18 yo	IM	No*	Yes [¶]
Protein Sciences	RIV3	FluBlok®	18-49 yo	IM	No [°]	Yes
PREVIOUSLY LICENSED INFLUENZA VACCINES						
CSL	IIV3	Afluria®	≥ 9 yo ^Δ	IM	Yes	Yes [¶]
GSK	IIV3	Fluarix®	≥ 3 yo	IM	Yes	Yes [¶]
GSK	IIV3	FluLaval®	≥ 18 yo	IM	Yes	Yes [¶]
Medimmune	LAIV3	FluMist®	2-49 yo	Intranasal	Yes	No
Novartis	IIV3	Fluvirin®	≥ 4 yo	IM	Yes	Yes [¶]
Novartis	IIV3	Agriflu®	≥ 18 yo	IM	Yes	Yes [¶]
Sanofi Pasteur	IIV3	Fluzone®	≥ 6 mo	IM	Yes	Yes [¶]
Sanofi Pasteur	IIV3	Fluzone High Dose®	≥ 65 yo	IM	Yes	Yes [¶]
Sanofi Pasteur	IIV3	Fluzone Intradermal®	18-64 yo	Intradermal	Yes	Yes [¶]
[¶] Permitted if mild to moderate egg allergy, but not with an anaphylactic reaction to eggs. *Influenza virus grown in dog kidney cells (cell culture) but may not be completely free of egg protein. [°] Manufactured with recombinant DNA technology by inserting influenza hemagglutinin genes into baculoviruses. [§] Abbreviations: IIV: Inactivated influenza vaccine. cclIV: Cell culture inactivated influenza vaccine. RIV: Recombinant influenza vaccine. LAIV: Live attenuated influenza vaccine. The numbers at the end of the abbreviations show how many influenza strains (3=2A,1B; 4=2A,2B). IM: Intramuscular. ^Δ May be given at age ≥ 5 years old If there is no other age-appropriate, licensed inactivated seasonal influenza vaccine available for a child aged 5-through-8 years who has a medical condition that increases the child's risk for complications from influenza.						
➤ For more details, see "Prevention and Control of Influenza with Vaccines: Interim Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2013." MMWR, May 10, 2013. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6218a3.htm?s_cid=mm6218a3_e ➤ An expanded CDC influenza vaccine statement will be published before the start of the 2013-2014 influenza season.						

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<http://www.azdhs.gov/phs/immun/vacNews.htm>